

FINDING OF NO SIGNIFICANT IMPACT

PROPOSED MODIFICATION TO REMOVAL OF NON-NATIVE FISH FROM THE COLORADO RIVER IN GRAND CANYON

Three Department of the Interior agencies, the Bureau of Reclamation (Reclamation), National Park Service (NPS), and U.S. Geological Survey (USGS), are conducting an experiment that includes modified releases from Glen Canyon Dam and mechanical removal of non-native fish in the Colorado River near its confluence with the Little Colorado River, approximately 60 miles downstream from Lees Ferry, Arizona. The experiment was authorized by the Secretary of the Interior after being recommended by the Glen Canyon Dam Adaptive Management Work Group, a federal advisory committee comprised of 25 member agencies, Native American tribes, and organizations. The action agencies are proposing a modification of ongoing mechanical removal of non-native fish to help protect native fish, particularly the endangered humpback chub (HBC). The proposed modification would expand the reach of the Colorado River in which mechanical removal of non-native fish is occurring another seven miles downstream to 73 miles below Lees Ferry. It is being advanced because of higher than expected success in removing non-native fish from the previously designated depletion reach. No changes would occur to the experimental flows portion of the experiment. The proposed modification is within the constraints established by applicable federal statutes (commonly known as the "Law of the River") and other applicable legal obligations.

An environmental assessment on the proposed action was released in September 2002 and a finding of no significant impact was determined in December 2002. On July 25, 2003, a supplement to the environmental assessment covering the proposed modification was released to the public for review and comment. On August 8, 2003, the Adaptive Management Work Group was convened by conference call to solicit their input on the proposed modification.

MECHANICAL REMOVAL OF NON-NATIVE FISH—Non-native fish removal is targeted at reducing adult rainbow and brown trout and other non-native fish in the Colorado River near the confluence of the Little Colorado River (LCR). The area around the confluence of the Colorado and Little Colorado rivers has the highest abundance of adult and juvenile humpback chub in the Colorado River mainstem. To help the HBC in this reach, non-native fish are being removed from an area located approximately five miles upstream (RM 56.4) to four miles downstream (RM 65.8) from the confluence of the Little Colorado and Colorado rivers. The depletion effort (i.e., the removal of non-native fish by electrofishing techniques) has been uniformly distributed within this 9.4 mile reach since January 2003. Under the proposed modification, the depletion reach will be extended downstream to RM 72.7, a distance of seven miles.

Efforts to date have reduced rainbow trout, brown trout, and common carp in the original depletion reach. At the conclusion of three of 12 scheduled river trips, in March 2003, Grand Canyon Monitoring and Research Center (GCMRC) scientists estimated 80% or more reductions in numbers of these three non-natives had been accomplished. Increases in the number of non-natives were observed at the beginning of the July river trip, but the populations were again

successfully reduced through electrofishing depletion. This unanticipated level of success has led to the proposed modification to expand the depletion reach downstream seven miles, while maintaining sufficient control efforts in the original reach to maintain non-native fish at 10% or less of their initial numbers.

The GCMRC will continue to conduct six depletion trips a year under the proposed modification. During each 10-day field trip there are five passes through the reach using four electrofishing boats that concurrently sample the river on opposing sides. Following each trip, the data are used to construct abundance estimates for rainbow trout, brown trout, and other non-native fish present at the beginning of each trip. Comparisons among trip population estimates and trip catchability coefficients are analyzed to evaluate if mechanical removal is an effective means to control undesirable fish species. Additionally, electrofishing and hoop nets are used to measure juvenile HBC relative abundance and any potential adverse effects on adult HBC.

On each successive river trip under the proposed modification, an initial depletion series will be conducted in the original river reach. Only if numbers of non-native fish are reduced to 10% or less of their original population sizes as encountered in January 2003 will researchers move downstream into the expansion reach to conduct mechanical removal.

A fish anesthetic is used to euthanize the non-native fish. The disposal mechanism for non-native fish is to transport them out of the Grand Canyon. In response to concerns expressed by Native American tribes, remains of the non-native fish are being used as fertilizer on gardens tended by Hualapai tribal members.

The proposed modification has several advantages and could be conducted at no increased cost from the original proposal. The action agencies believe that it has greater probability to increase recruitment of endangered HBC above the level that would occur under the existing action. Advantages of this modification also include reducing the amount of electrofishing that adult and juvenile HBC are subjected to in the LCR inflow area, increasing the amount of hoop net sampling for juvenile HBC throughout the removal reach, reducing the amount of scientific activity in an area of the river subject to high recreational use and concentrating that effort in fewer river miles downstream, and substantially reducing the amount of scientific activity in an area of high cultural significance to Native Americans.

MITIGATION MEASURES — The following measures have been agreed upon to remove or mitigate potentially negative effects of the proposed modification.

No mechanical removal of non-native fish by electrofishing will occur within 50 feet of the point (line) of the confluence of the LCR and Colorado River.

Non-native fish euthanized during mechanical removal activities will continue to be preserved and transported out of Grand Canyon to lands of the Hualapai tribe where they will be used as fertilizer in gardens maintained by the tribe for food.

A number of young-of-year humpback chub, not to exceed 300, that might otherwise be carried into the Colorado River and suffer a high rate of mortality will be translocated out of the lower Little Colorado River to the perennial reach above the series of travertine falls called Atomizer Falls. This reach does not contain the endangered fish, probably because the falls are too high, but research using caged humpback chub indicates that they can survive there.

ANALYSIS REGARDING WHETHER THE PROPOSED ACTION WILL HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT— As defined in 40 CFR § 1508.27, significance is determined by examining the following criteria:

- **Impacts that May Be Both Beneficial and Adverse**
- **Degree of Effect on Public Health or Safety**
- **Unique Characteristics of the Geographic Area of the Proposed Action**
- **Degree of Controversy for Effects of the Proposed Action**
- **Degree to which Effects of the Proposed Action are Highly Uncertain**
- **Degree to which the Proposed Action Sets a Precedent for Future Actions with Significant Effects or Represents a Decision in Principle about a Future Consideration**
- **Whether the Action is Related to other Actions with Individually Insignificant but Cumulatively Significant Impacts**
- **Degree to which the Action may Adversely Affect Historic Properties or Cause Loss or Destruction of Significant Cultural Resources**
- **Degree to which the Action may Adversely Affect Federally Listed Species or their Critical Habitat**
- **Whether the Action Threatens a Violation of Federal, State, or Local Environmental Protection Law**
- **Impairment of Park Resources or Values**

Each element is discussed as follows:

Impacts that May Be Both Beneficial and Adverse— As fully discussed in the environmental assessment and identified in its supplement, neither the proposed action or the proposed modification will affect environmental justice, National Park Service operations or employee and visitor health and safety. The proposed action will affect biotic communities, Federally listed species and their critical habitats, recreational angling and boating, trout and other non-native fishes, and wilderness resources. The long-term expected outcome of the proposed action is to benefit native fish, principally the endangered humpback chub. Based on best available information, negative effects, where they occur, are predicted to be minor and temporary.

Degree of Effect on Public Health or Safety— No effects on public health or safety are anticipated from the proposed modification.

Unique Characteristics of the Geographic Area of the Proposed Action — The proposed action will occur within the confines of Grand Canyon National Park. No wild and scenic rivers will be affected by the proposed action. No Indian Trust Assets are found in the project area. Some effects on ecologically critical areas will occur during mechanical removal of non-native fish, but the effects will be temporary in nature and the long-term effects are expected to be beneficial.

Degree of Controversy for Effects of the Proposed Action — Two aspects of the proposed action generated public controversy that also will occur with the proposed modification. First, several Native American tribes consider the confluence of the LCR and Colorado River sacred, and they object to killing fish there. This concern has been mitigated by eliminating any electrofishing immediately around the confluence. Second, three Native American tribes expressed a concern over the large number of non-native fish that would be collected and euthanized without any recognized beneficial use. This controversy has been addressed through an agreement to place the remains of the dead fish in gardens tended by Native Americans to serve as a fertilizer substance.

Degree to which Effects of the Proposed Action are Highly Uncertain — The proposed modification is being carried out as part of the Glen Canyon Dam Adaptive Management Program (GCDAMP) to achieve goals of that program and provisions of the Grand Canyon Protection Act. It is being carried out as an experiment that will be monitored under the auspices of the GCMRC using a science plan developed specifically to assess the proposed action and reviewed by the Science Advisors to the GCDAMP. As an experiment, the proposed action operates on hypotheses constructed from the best available scientific information after years of study by scientific researchers in the Grand Canyon. As with all experiments, this action has some uncertainty in outcomes; however, the level of uncertainty, particularly given the feedback system to resource managers built into accompanying research and monitoring, does not rise to the level of highly uncertain, unique or unknown risks.

Degree to which the Proposed Action Sets a Precedent for Future Actions with Significant Effects or Represents a Decision in Principle about a Future Consideration — The GCDAMP operates under the principles of adaptive management in which lessons learned by doing, through scientific experiments, are built into present and future management decisions. The iterative approach taken in this process helps to ensure that changes in management direction are not so large as to have a significant effect on the system and its resources. Neither does any single outcome represent a decision in principle about a future consideration because the outcome of each experiment is added to the knowledge gained in previous experiments in making prospective management decisions.

Whether the Action is Related to other Actions with Individually Insignificant but Cumulatively Significant Impacts — No non-Federal projects were identified as planned, in progress, or completed in the project area. Eight Federal projects, programs, or plans were identified in the environmental assessment for the proposed action and are still ongoing at this

time. Many of these actions are complementary to the proposed action in achieving NPS and GCDAMP management objectives; only one was identified as having a minor negative effect on achieving management objectives for the GCDAMP¹, but it is not related to the mechanical removal of non-native fish. Adverse impacts of the proposed modification would be a relatively minor component of the overall minor cumulative impacts.

Degree to which the Action may Adversely Affect Historic Properties or Cause Loss or Destruction of Significant Cultural Resources— There will be no adverse effects to historic properties as a result of implementing the proposed modification. The electrofishing portion of the experiment is considered by Tribal nations to have an adverse effect on tribal values; however, the effect will be mitigated by not electrofishing at the confluence of the LCR and Colorado River and by utilizing killed trout and other non-native fish for a beneficial purpose.

Degree to which the Action may Adversely Affect Federally Listed Species or their Critical Habitat— Six Federally listed species, three of which have designated critical habitat, occur in the proposed action area. Three of those species, the Kanab ambersnail, humpback chub, and bald eagle received “may affect, likely to adversely affect” determinations in the biological assessment for the proposed action. Identified adverse effects on listed species or their critical habitat are short-term in nature, and long-term consequences of the proposed action are expected to be beneficial. Conservation measures have been identified for Kanab ambersnail and humpback chub to reduce potential negative effects of the proposed action. The remaining impacts to listed species or their critical habitat are expected to be negligible to minor. No adverse effects to Federally listed species will be exacerbated by the proposed modification, and conservation measures identified for the proposed action remain in effect.

Whether the Action Threatens a Violation of Federal, State, or Local Environmental Protection Law— The proposed modification violates no federal, state, or local environmental protection laws.

Impairment of Park Resources or Values— The proposed modification is designed to enhance, rather than impair the resources and values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established. There will be no significant adverse effects to park values from the proposed modification.

¹ The Colorado River Interim Surplus Criteria EIS identified a slight reduction in the frequency of Beach/Habitat Building Flows from Glen Canyon Dam as a result of implementing interim surplus criteria. Any impacts resulting from the adoption of Interim Surplus Criteria were considered when this proposed action was developed.

PUBLIC COMMENT — Five comment letters were received on the supplemental environmental assessment.

Two commenters voiced concern over the lack of evidence in the ongoing effort that non-native fish are indeed preying on native fish, including endangered humpback chub. They indicated a desire to see results on stomach contents from non-native fish removed from Grand Canyon. GCMRC is presently working on this analysis and will release the information as soon as it is available. Earlier research done in Grand Canyon has confirmed that both brown trout and rainbow trout prey upon native fish, including the endangered HBC, and the common carp is a widely recognized egg predator.

One commenter voiced concern that the proportion of native fish sampled remained small, in spite of high removal rates for non-natives. Only one reproductive season has ensued since the onset of this action, however, and it is unlikely that an increase in the proportion of native fish would be evidenced in sampling even if such an increase is occurring. An increase in recruitment for the endangered HBC, a fish that can live 20 years or more, can not be confirmed for three to four years.

One commenter identified another non-native control effort using toxic chemicals that had failed and incurred a legal liability. The action agencies do not believe the ongoing action or the proposed modification contain a similar liability.


One commenter advocated that much effort and funding expended on the proposed modification could have been saved if the action agencies had initially designed the experiment with more flexibility. The action agencies agree. They will take appropriate steps to design future experiments with greater flexibility and identify their intent to do so to the Adaptive Management Work Group.

One commenter thought the proposed modification constitutes improper science and is an inappropriate deviation from the original objective. The action agencies disagree and have identified that the proposed modification contains opportunities to both further advance original project objectives and improve conditions for the endangered HBC. The same commenter indicated there had been no independent review of this proposal by external scientists. The action agencies agree that no such review was identified in the proposal; however the Science Advisors to the GCDAMP, an external peer review group of eminent scientists, was instrumental in defining the proposed action and agrees that the proposed modification is warranted.

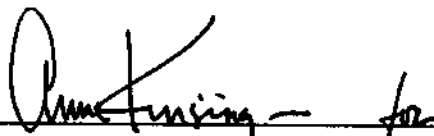
DECISION — The proposed modification will not have a significant adverse effect on the human environment. It is designed to increase removal of non-native fish from the Colorado River and improve habitat conditions for the endangered humpback chub. Negative environmental impacts that could occur are negligible to moderate, and are expected to be short term in effect. No significant unmitigated adverse impacts on public health, public safety, threatened or

endangered species, historic properties, or other unique characteristics of the region have been identified as a result of analysis of the proposed action. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the proposed action will not violate any federal, state, or local environmental protection law.

Based on the Supplemental Environmental Assessment, an analysis of all oral and written comments received on the Supplemental Environmental Assessment, and the foregoing, a finding of no significant impact is justified for the proposed action. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

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